Province of British Columbia
Ministry of Forests

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MIDCOAST
TIMBER SUPPLY AREA
OPTIONS REPORT

Approved by: _____

K.J. Ingram
Regional Manager
Vancouver Forest Region
Ministry of Forests

May 23,1990

PROLOGUE

The Options Report for the Midcoast Timber Supply Area is an intermediate step in the preparation of the Resource Management Plan for this area. The review of this report is one of the opportunities for public input into the planning process. This report, and the input received, will provide basic information for the development of a draft Resource Management Plan for additional public comment.

The Options Report contains various management choices and lists some of the foreseeable impacts of each. This is not a complete listing but demonstrates the range of the choices available. The purpose of this report is to solicit public response regarding forest management direction in this TSA as a basis for development of a Resource Management Plan for this TSA.

Although this report deals with timber, recreation and fish and wildlife habitat management options relatively independently, the 'option' which will form the basis of the Resource Management Plan will integrate resource uses.

Public input received will be taken into account by the Regional Manager and the Chief Forester in determining forest management objectives and strategies for the timber, range and recreation resources of the TSA. The objectives and strategies selected will be incorporated into a draft Resource Management Plan to be prepared by the Regional Manager.

The draft Resource Management Plan will be subject to public review and comment before a final plan is recommended by the Regional Manager to the Chief Forester.

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INTRODUCTION.

The objective of this report is to describe a number of resource use options which have been identified for consideration in developing a Resource Management Plan for the Midcoast Timber Supply Area. The next step in the planning process is to decide which option or combination of options is to be considered for implementation. Written comments and recommendations concerning this matter may be forwarded no later than July 6, 1990 to:

Regional Manager
B.C.Forest Service
4595 Canada Way
Burnaby , B.C.
V5G-4L9

Attention: G.W. Sutherland, R.P.F.
Planning/Inventory Officer

This report, together with the written comments and recommendations received, will provide the basis for the Regional Manager's recommendation of an Allowable Annual Cut (AAC) to the Chief Forester, and will guide the preparation of a Resource Management Plan. This plan will set out the resource management objectives for the next five years, for the timber, range and recreation resources under Forest Service jurisdiction and integrate these with the management objectives of other resource management agencies. The plan will also establish the long term strategies for managing these resources and will identify the programs required to implement these strategies. The approved plan will include the AAC as the first five years of the long term timber supply objective.

This report has been prepared in accordance with Chapter 3 of the Resource Planning Manual. Additional information regarding the development and evaluation of the options presented in this report may be found in the following TSA planning documents which are available from the Regional Manager:

Statement of Issues, Options and Procedures for the Midcoast TSA Plan, November 1986, Ministry of Forests, Vancouver Forest Region

Midcoast TSA Timber Supply Analysis Information Report, October 1989, Ministry of Forests, Inventory Branch, Forest Resource Analysis Section.

Midcoast TSA Analysis Report, March 1990, Ministry of Forests, Inventory Branch, Forest Resource Analysis Section.

EXECUTIVE SUMMARY

An Allowable Annual Cut (AAC) of 1 400 000 cubic meters was determined in 1980 based on a timber supply analysis carried out at that time. This AAC was later increased to 1 515 600 cubic meters to facilitate the issuance of temporary forest harvesting rights within forest stands which were not included in the 1980 AAC determination.

The determination of the AAC in 1980 took into account the preponderance of mature and overmature forest stands and the minor component of immature stands within the TSA at that time. The AAC was selected to achieve a long term improvement in the age class distribution of the forests of this TSA and to increase the productivity of forest sites occupied by old growth forest stands.

The determination of the AAC also recognized that areas were included in the AAC which had historically been by-passed by operators within the TSA. In approving this AAC, the Chief Forester stipulated that future licensee performance must be demonstrated in these marginal timber stands and areas which were included in the AAC.

A reassessment of the operable forest land base suitable for timber harvesting and production has resulted in a decrease in the areas available for timber harvesting by approximately 30 000 ha due to the previously mentioned factors. This decrease in the area of operable mature timber is offset to some extent by an increase in the immature forest area due to the inclusion of anticipated reversions to the Crown forest land base of areas currently occupied by Timber Licences.

The net forest land base considered available for long term forestry activities based on the above considerations has been determined by this re-analysis to be 256 600 ha which is expected to yield approximately 956 500 cubic meters annually of wood fibre.

The most optimistic outlook for the forest industry determined in the re-analysis of this TSA is similar to the rationale upon which the current AAC is based, namely that utilization of the less favourably located and less desirable forest stands will occur. This assumption results in increased long run sustainable yield levels ranging from 1.1 to 1.5 million cubic meters of wood fibre per year. The utilization of such stands depends on changing technological and economic conditions bringing these stands within the margin of economic recovery.

The Midcoast TSA contains opportunities for outstanding wilderness and marine recreation experiences as well as scenic visual corridors important to the tourism industry (i.e. The Inside Passage Marine Route Corridor).

Currently the demand for forest oriented recreation opportunities and facilities is low compared to south coastal B.C., although the demand for additional facilities is increasing. The wilderness and scenic values within the TSA will result in higher use levels by tourists (including pocket cruises) and forest oriented recreation users. This increase in tourism and recreation demand will have an impact on the manner and rate at which forest harvesting development may proceed in portions of the TSA.

The integration of fisheries and wildlife habitat considerations into the forest management unit level of planning is important for integrated resource management within the TSA due to the existence of internationally recognized fisheries and wildlife values. These values are an outstanding salmon and steelhead sports fishery and an exceptional grizzly bear population. Some of the largest recorded salmon, steelhead and grizzly bears in the world use habitats within this TSA. Constraints on forest management practices within specific drainages of this TSA are necessary to maintain the integrity of these habitats.

Current habitat requirements as identified by the Ministry of Environment and the federal Department of Fisheries and Oceans include approximately 11 000 hectares of critical habitat for grizzly bear and blacktail deer as well as fresh water habitat for the steelhead and salmon fishery.

Considerations for forest management issues which do not impact upon the forest producing land base will be dealt with at lower planning levels following integrated resource management principles.

BRITISH COLUMBIA
TIMBER SUPPLY AREAS
BC
Ministry of Forests
TIMBER SUPPLY AREAS
VANCOUVER FOREST REGION
PRINCE RUPERT
PRINCE GEORGE
QUEEN
CHARLOTTE
T.S.A.
CARIBOO
NELSON
KAMLOOPS
SUNSHINE
COAST
T.S.A.
FRASER
T.S.A.
ARROWSMITH
T.S.A.

Figure 1.

MINISTRY OF FORESTS

VANCOUVER FOREST REGION

MID-COAST T.S.A.

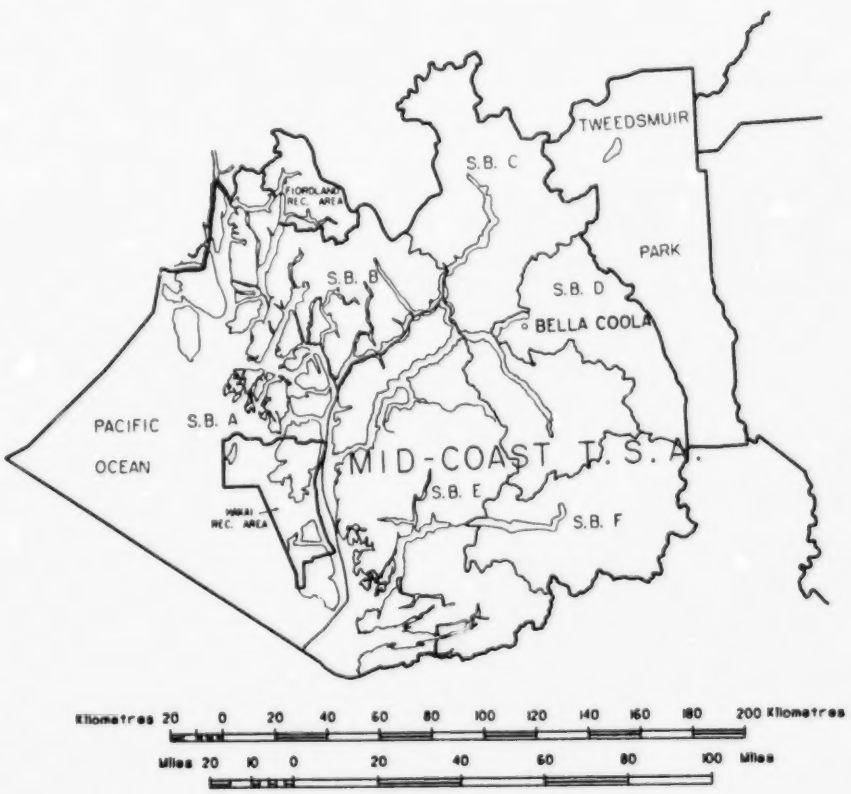

Figure 2

1.0 DESCRIPTION OF THE TSA

The Midcoast TSA is situated in the central coastal portion of British Columbia (see Figure 1.) The approximate boundaries of the TSA are as follows; Tweedsmuir Park to the east, Queen Charlotte Sound to the west, Cape Caution to the south and Mussel River to the north. The TSA is traversed by numerous long narrow waterways such as Smith Inlet, Rivers Inlet, Burke Channel, Dean Channel, South Bentinct Arm, Mathieson Channel and Finlayson Channel.

The primary population centre is Bella Coola and the adjacent Bella Coola Valley, as well as other communities such as Namu, Bella Bella, Ocean Falls and Klemtu. Smaller pockets of settlement are also scattered throughout the TSA.

Transportation throughout the TSA is mainly limited to marine and air travel. Road access to Bella Coola is by Highway 20 from Williams Lake via the Chilcotin Plateau.

The primary industries in the TSA are fishing, logging and tourism with some agricultural activity occurring in the Bella Coola Valley.

2.0 DESCRIPTION OF THE FOREST RESOURCES

2.1 TIMBER

The total area encompassed by the Midcoast TSA is 2 339 154 hectares, of which 2 270 800 hectares is Crown land in Provincial Forest under the jurisdiction of the Ministry of Forests. The area of productive Crown forest land within the TSA is 744 839 hectares (not including future Timber Licence reversions) of which over 90 percent (675 726 ha) is over 121 years of age and is considered mature.

Products from timber extracted from the Midcoast TSA are manufactured primarily outside the timber supply area. Current demand for Crown timber from the TSA can be expressed as the volume of timber committed to various forest tenures and is apportioned as follows:

Apportionment (Section 8 of the Forest Act)

	m3	%
Forest Licences, replaceable	1 250 834	82.6
TSL* (major). >10 000 m3	0	0.0
SBFEP** - any category (sec 16)	44 430	2.9
Category 1 (sec 16)	0	0.0
Category 2 (sec 16)	0	0.0
Bid Proposals (sec 16)	72 908	4.8
TSL (major) <=10 000 m3	3 828	0.3
Forest Service Reserve	14 000	0.9
Woodlot Licences	14 000	0.9
Temporary Licences	115 600	7.6
Allowable Annual Cut	1 515 600	100.0

Comments:

Temporary AAC of 90 600 m3 to Ash River Investments Ltd. for a 5 year term expiring on December 31, 1990.

Temporary AAC of 25 000m3 to Mill and Timber Products Ltd. for a 10 year term expiring on July 14, 1998.

*Timber Sale Licence
**Small Business Forest Enterprise Program

2.2 RANGE

The current demand for Crown range is approximately 1 150 AUM's in the Midcoast TSA, used primarily for a small cattle industry. This TSA ranks low when compared to other TSA's in the Province in terms of forage production and demand for additional Crown forage. The demand for Crown range land is not expected to increase significantly in this TSA over the next five years.

2.3 RECREATION

The Mid-Coast TSA contains outstanding opportunities for "wilderness type" experiences for recreation activities such as steelhead/salmon fishing, ocean kayaking, big-game hunting, mountain climbing - ski mountaineering and heritage trail hiking.

The Dean River fishery is considered to be one of the world's top steelhead rivers and is also an important salmon producing stream. Rivers Inlet and Hakai Passage are both renowned locations for catching large chinook and other species of salmon.

The numerous small islands and rugged fiords of the outer coast provide excellent opportunities for ocean kayaking and light craft boating.

The Inside Passage Marine Route provides an extremely important industrial and recreation/tourism transportation corridor between Vancouver Island and Prince Rupert - Alaska in relatively protected waters along the west coast of B.C. Future growth is expected in the tourism sector with expansion into small boat oriented activities such as charter yachts, pocket cruises, fishing excursions, wildlife viewing and cultural heritage tours. The scenic integrity of the Inside Passage is an important element for achieving this future growth.

The Alexander MacKenzie Heritage Trail passes through the Mid-Coast TSA en route to its' terminus at the historic site of MacKenzie Rock (Sir Alexander MacKenzie Park).

The management of scenic values along the Bella Coola Valley and Talchako River are considered to be a high priority in the TSA.

The Midcoast TSA is divided into four Recreation Management Units - Interior, Mid Coast South, Mid Coast North and Outer Coast.

Recreation opportunities are described by the number of hectares of land related to each Recreation Opportunity Spectrum (ROS) class as follows: (See Appendix ii)

Recreation Opportunity Spectrum Class	Size (ha)	%
Primitive (P)	499 711	22
Semi-Primitive,Non-Motorized (SPNM)	800 540	36
Semi-Primitive, Motorized (SPM)	417 743	18
Roaded Resource Lands (RRL)	552 806	24
Rural/Urban (R/U)	0	0

Presently on the Crown land portion of the TSA, The following facilities are provided by the Ministry of Forests:

Recreation Sites - 2 (9 vehicle units)
Recreation Trails - 3 (25 km)

Most of the existing recreation facilities are provided in the Semi-Primitive and Roaded Resource Land portion of the ROS in areas accessible by vehicle. Due to the ruggedness and relative isolation of the Outer Coast, no developed facilities have been established there to date, however, there is good potential to provide marine access facilities as public demand warrants. The most popular activities in the TSA include angling, boating, camping, hiking, four-wheel drive and all terrain vehicle driving, mountaineering and horseback riding.

Demand for recreation opportunities and facilities is increasing at a moderate pace for vehicle accessible sites as tourism expands westward from the Cariboo. Although present use of existing sites and trails remains relatively low, the demand for additional developed facilities and dispersed use is increasing approximately 20 % annually.

The management of scenic values along the Bella Coola Valley, Talchako River and the Inside Passage Marine Route is considered a very high priority in this TSA.

The Midcoast TSA has the largest concentration of Primitive recreation opportunities (20%) and the greatest amount of Primitive/Semi Primitive 'wilderness type' recreation opportunities (75%) remaining in the Vancouver Forest Region.

2.4 FISH AND WILDLIFE

From a regional, provincial and global perspective, the wildlife and fisheries resources of the Mid-Coast TSA are extremely valuable.

People from many countries, population centres within Canada and local residents use the Mid-Coast TSA for recreation. Much of this recreation is centred around both consumptive and non-consumptive use of the fish and wildlife resources. Recreational fishing is very popular on many streams,lakes, and rivers. Their tributaries are important spawning and rearing areas for salmonids of importance for sport and commercial fishing. The coastal grizzly bear is a world class trophy species with some of the largest bears ever recorded coming from the Mid-Coast. Non-consumptive uses such as wildlife viewing and photograpy are growing in importance as recreational activities.

3.0 FOREST RESOURCE MANAGEMENT ISSUES IN THE TSA

The 1986 Statement of Issues, Options and Procedures set the framework for the analysis that followed. Since the process was initiated and the analysis completed, new issues have arisen and the TSA planning process has expanded to include more than an analysis of future timber supplies. The following list of issues includes those identified in the Statement of Issues,Options and Procedures as well as pertinent issues which have arisen subsequently. While new issues have been identified, it should also be noted that some of the issues originally identified may be less important today because of changed technical, economic and legislative conditions. Not all of the issues identified below have been analyzed in this report, but will be dealt with in the Resource Management Plan or lower planning levels.

RESOURCE MANAGEMENT ISSUES

1. How do actual programs and forest management practices carried out over the period 1981 - 1989 compare with the assumptions made in the determination of the AAC in 1980?

2. What is the impact on all resource values of continuing the actual forest management practices and standards which occurred during the period 1981 - 1989?

3. What forestry programs and funding levels are required to maintain the current AAC over the long term?

4. What long term timber supplies can be achieved by implementing the silviculture program as currently outlined in the Vancouver Forest Region Silviculture Plan ((including assistance from the Federal Provincial Forest Resource Development Agreement (FRDA))?

5. What is the impact on short and long term timber supplies of reserving critical fish and wildlife habitat from timber harvesting? These areas have been identified as critical habitat for black tailed deer, grizzly bear as well as riparian zones to protect fishery habitat by the Ministry of Environment (and the Department of Fisheries and Oceans).

6. What is the impact on short and long term timber supplies of managing visually sensitive areas to approved Visual Quality Objectives (VQO's) along the Inside Passage Marine Route in order to maintain scenic values?

7. What is the impact on short and long term timber supplies of removing portions of the Dean River drainage from the timber producing land base of the TSA for the purpose of a Wildlife Management Area under the jurisdiction of the Ministry of Environment?

8. What is the impact on short and long term timber supplies of removing the upper portions of the Machmell and Neechanz drainages from the Allowable Annual Cut of the TSA. This may be necessary due to very high levels of decadent timber which render these areas uneconomic for harvesting?

9. What is the impact on short and long term timber supplies of including those better quality forest stands in the operable land base which are considered inoperable in the Status Quo Option?

10. What is the impact on visually sensitive areas (e.g. Bella Coola Valley, Inside Passage, Talchako River) of maintaining the current level of harvesting?

11. What is the interaction between alternative levels of scenic quality and timber harvesting on the management of the forest resources of this TSA?

12. What is the interaction between varying levels of backcountry recreation and timber harvesting on the management of the forest resources of this TSA?

13. What is the interaction between the long term economic and social stability of local communities and alternative rates of harvest on the management of the forest resources of this TSA?

14. What is the impact on short and long term timber supplies of removing the proposed Marine Provincial Parks and anchorages along the Inside Passage Marine Route from the TSA?

15. What is the impact on short and long term timber supplies of higher than average levels of decadence in overmature Hemlock stands throughout the TSA?

4.0 DESCRIPTION AND ANALYSIS OF THE OPTIONS

4.1 AAC RATIONALE OPTION

This option forecasts future timber supplies based on the forest management assumptions made when the existing AAC was established in 1980. These are the assumptions made regarding accessibility , silviculture program levels, losses to fire, insects and disease etc. This option is presented to enable a comparison to be made of historical management performance (Status Quo Option) to the planning assumptions upon which the current AAC is based (AAC Rationale Option).

The key assumptions in this option are:

1. The productive forest land base was netted down for operability considerations by the exclusion of broad forest stand types and productivity classes. Assessment of operability based on stand quality, location, and terrain was not carried out.

2. Fish and Wildlife habitat and recreation program requirements were based on previous Environmentally Sensitive Area mapping carried out by the Ministry of Forests.

3. Basic silviculture was assumed to occur on all harvested areas.

4. Allowances were made for unsalvaged volume losses due to fire and blowdown and losses due to road and landing construction.

5. Timber Licence reversions to the productive forest land base of the TSA were not considered in the 1979 analysis.

Summary

Net Land Base (ha)	226 600
Allowable Annual Cut (m3)	1 400 000
Long Run Sustainable Yield (m3/yr)	837 900
LRSY minus AAC (m3/yr)	-562 000
Current Total Inventory (m3)	117 630 000
Recreation Opportunity Spectrum class distribution:	
Primitive (P) (ha)	499 711
Semi-Primitive (SP) (ha)	1 218 283
Roaded Resource Land (RRL) (ha)	552 806

4.2 STATUS QUO OPTION

This option forecasts future supplies of timber and forest oriented recreation based on program levels and management practices which have occurred since t h e current AAC was approved in 1980.

Assumptions:

1. Past trends in the harvesting of the mature forest stands in the TSA will continue. These trends reflect constraints on availability due to economic, technical and environmental considerations. The utilization of the forest profile has proven considerably less than was assumed in the determination of the AAC.

2. Basic silviculture will continue to be achieved on all harvested areas.

3. Range and recreation programs will be continued at historic levels. See the Description of Resources, Range and, Recreation (sections 2.2 and 2.3)

4. No additional provisions other than the 1980 Environmentally Sensitive Area (ESA) allowances will be used for the protection of critical fish and wildlife habitat.

5. Past trends in unsalvaged volume losses due to fire, insects, diseases and blowdown will continue.

6. No allowance is made for future land withdrawals from the Provincial Forest land base for single use purposes.

7. Additions to the forest land base due to past and future Timber Licence reversions are included.

8. The hemlock - balsam stands in the upper portions of the Machmell and Neechanz drainages have been excluded from the forest land base in this option due to the inability of the forest industry to operate in these areas under current economic conditions.

Summary and Comparison with the AAC Rationale Option

		(1)
Net Land Base (ha)	256 600	+13.2%
Allowable Annual Cut (m3)	1 515 600	+8.2%
Long Run Sustainable Yield (m3/yr)	956 500	+14.2%
LRSY minus AAC (m3/yr)	-559 100	
Current Total Inventory (m3)	97 450 000	-17.2%
Recreation Opportunity Spectrum class distribution:		
Current:		
Primitive (P) (ha)	499 711	
Semi-Primitive (SP) (ha	1 218 283	
Roaded Resource Land (RRL) (ha)	552 806	
After twenty year period:		
Primitive (P) (ha)	430 107	
Semi-Primitive (SP) (ha)	1 047 726	
Roaded Resource Land (RRL) (ha)	793 047	

(1) This column indicates the percentage change (+/-) between the Status Quo Option and the AAC Rationale Option.

The overall net land base considered available for timber production and the long run sustainable yield of the TSA have increased compared to the AAC Rationale Option due to the inclusion of areas currently occupied by Timber Licences which will revert to the Crown in the future. These areas were not included in the AAC determination in 1980. The Allowable Annual Cut has increased due to the issuance of non-replaceable Timber Sale Licences. The total current inventory has decreased due to revised estimates of the operable mature timber in the TSA.

Implications:

1. The current AAC of 1 515 600 cubic metres is 58% greater than the long run sustainable yield (LRSY) of 956 500 cubic metres per year for the land base in this option. The decline in the rate of harvest implied in this option will have a detrimental impact on industries directly and indirectly dependent on timber extracted or manufactured from this TSA.

2. This option does not satisfy the critical h a b i t a t protection requirements for grizzly bear, black tailed deer and fisheries as have been currently identified by the Ministry of Environment and the Department of Fisheries and Oceans.

3. The future supply of forest recreation opportunities will be affected by timber harvesting. There is a projected decrease of 14 % in Primitive and Semi-Primitive areas over the next twenty years. The Roaded Resource land ROS class will have a corresponding increase in area.

4. Existing recreation facilities will not meet projected increases in public recreation demand.

5. Scenic values will be impacted where harvesting occurs along travel corridors, adjacent to communities and other sensitive areas, except where restrictive Visual Quality Objectives (VQO's) have been established and a landscape analysis has been carried out (i.e. the Inside Passage Marine Route). Short term visual quality will diminish in some areas of high sensitivity with an adverse impact on scenic values.

4.3 TIMBER PRODUCTION EMPHASIS OPTION

This option is divided into 3 scenarios which examine different land bases and forest management programs aimed at enhancing the current and future timber supplies. Although presented separately, combinations of these scenarios may be considered in the determination of an AAC and the subsequent Resource Management Plan.

4.31 IMPROVED ACCESS SCENARIO

Assumptions

1. The better quality hemlock-balsam forest stands (those greater than 121 years of age and greater than 28.4 meters in height) considered inoperable in the Status Quo Option are included in the net land base of this scenario.

2. All other assumptions are as outlined in the Status Quo Option.

Summary and Comparison with the Status Quo Option

		(1)
Net Land Base (ha)	383 800	+49.6%
Allowable Annual Cut (m3)	1 515 600	
Long Run Sustainable Yield (m3/yr)	1 379 900	+44.3%
LRSY minus AAC (m3/yr)	-135 700	
Current Total Inventory (m3)	173 780 000	+78.3%
Recreation Opportunity Spectrum class distribution:		
Current:		
Primitive (P) (ha)	499 711	
Semi-Primitive (SP) (ha	1 218 283	
Roaded Resource Land (RRL) (ha)	552 806	
After next twenty year period:		
Primitive (P) (ha)	Less P, SP than	
Semi-Primitive (SP) (ha)	Status Quo.	
Roaded Resource Land (RRL) (ha)	More RRL than in Status Quo.	

(1) This column is the percentage difference (+/-) between this scenario and the Status Quo Option.

Implications:

1. This scenario clearly illustrates the significance of economics on the timber supply in this TSA. A comparison of this scenario with the Status Quo Option indicates that the current AAC could be maintained indefinitely were these currently inoperable hemlock-balsam stands to become economically viable for forest industry operations.

2. A substantial reduction in the areas of the Primitive and Semi-Primitive-Non-Motorized ROS classes can be expected due to the location of the increased harvesting activity which is implicit in this scenario.

3. This scenario can also be expected to increase the extent of modification to forest landscapes due to the same factors referred to in (2) above.

4. A reduction in the area of currently critical wildlife habitat may occur, although the extent and impact cannot be determined accurately until each forest stand involved is examined on a site specific basis.

4.32 INCREMENTAL SILVICULTURE SCENARIO

Assumptions

1. This scenario assumes that basic and a specified level of incremental silviculture will be achieved. The incremental silviculture activities prescribed are; reforestation of backlog Not Satisfactorily Restocked (NSR) areas,fertilization and spacing of Douglas-fir types and the conversion of some Alder sites to a suitable coniferous species.

2. All other assumptions in this scenario are the same as listed in the Status Quo Option

Summary and Comparison with the Status Quo Option

		(1)
Net Land Base (ha)	256 600	
Allowable Annual Cut (m3)	1 515 600	
Long Run Sustainable Yield (m3/yr)	990 000	+3.5%
LRSY minus AAC (m3/yr)	-525 600	
Current Total Inventory (m3)	97 540 000	

Recreation Opportunity Spectrum class distribution:

Current:	
Primitive (P) (ha)	499 711
Semi-Primitive (SP) (ha	1 218 283
Roaded Resource Land (RRL) (ha)	552 806

After twenty year period:

Primitive (P) (ha)	430 107
Semi-Primitive (SP) (ha)	1 047 726
Roaded Resource Land (RRL) (ha)	793 047

(1) This column indicates the percentage change (+/-) between this scenario and the Status Quo Option.

Implications:

1. A comparison of this scenario with the Status Quo Option indicates that the long run sustainable yield of the TSA can be increased by 34 700 m3/yr.

2. The long term timber supply outlook for the forest industry is improved in this scenario as compared to the Status Quo Option.

4.33 MACHMELL AND NEECHANZ DRAINAGE SCENARIO

Assumptions

1. In this scenario, the decadent and uneconomic hemlock-balsam forest stands in these drainages which were excluded from the Status Quo Option have been included in the land base available for long term timber production.

2. All other assumptions are the same as in the Status Quo Option.

Summary and Comparison with the Status Quo Option

		(1)
Net Land Base (ha)	262 900	+2.5%
Allowable Annual Cut (m3)	1 515 600	
Long Run Sustainable Yield (m3/yr)	977 900	+2.2%
LRSY minus AAC (m3/yr)	-537 700	
Current Total Inventory (m3)	101 290 000	+3.9%

Recreation Opportunity Spectrum class distribution:

Current:

Primitive (P) (ha)	499 711
Semi-Primitive (SP) (ha	1 218 283
Roaded Resource Land (RRL) (ha)	552 806

After twenty year period:

Primitive (P) (ha)	430 107
Semi-Primitive (SP) (ha)	1 047 726
Roaded Resource Land (RRL) (ha)	793 047

(1) This column indicates the percent change (+/-) between this scenario and the Status Quo Option.

Implications:

1. This scenario increases the short term volume of timber available for harvest for the forest industry by 3.9% and increases the long run sustainable yield of the TSA by 21 400 m3/yr. This scenario has a slightly more favourable impact on the short and long term timber supply outlook for the forest industry in the TSA compared to the Status Quo Option.

4.4 REDUCED ALLOWABLE ANNUAL CUT OPTION

Assumptions

1. This option provides an immediate reduction in the Allowable Annual Cut of the TSA to 956 500 cubic meters. This reduced AAC is equal to the long run sustainable yield of the TSA for the net land base of 256 600 hectares.

2. All other assumptions are the same as the Status Quo Option.

Summary and Comparison with the Status Quo Option

		(1)
Net Land Base (ha)	256 600	
Allowable Annual Cut (m3)	956 500	(-36.8%)
Long Run Sustainable Yield (m3/yr)	956 500	
LRSY minus AAC (m3/yr)	0	
Current Total Inventory (m3)	97 450 000	

Recreation Opportunity Spectrum class distribution:

Current:

Primitive (P) (ha)	499 711
Semi-Primitive (SP) (ha	1 218 283
Roaded Resource Land (RRL) (ha)	552 806

After twenty year period:

The change in the area of P, SP, and RRL areas will the same as the same as the Status Quo Option but will occur at a slower rate due to the reduced harvest rate.

(1) This column indicates the percent change (+/-) between this option and the Status Quo Option.

Implications:

1. This option will have a negative short term impact on the economic and social benefits derived from the forest products industry within the TSA due to a 37% percent reduction in the Allowable Annual Cut of the TSA. The reduced Allowable Annual Cut of 956 500 cubic meters, however, can be maintained indefinitely because it is based on the long run sustained yield capacity of the TSA.

   The negative impacts of this reduced rate of harvest may be offset to some extent by a more stable supply of raw material to the forest industry in the long term and a more stable long term economic outlook for the communities within the TSA which rely on the economic well being of the forest industry.

2. This option will have a favourable impact on certain types of forest oriented recreation activity which occur in the primitive and semi primitive non motorized class areas of the Recreation Opportunity Spectrum.

3. This option will benefit the management of critical fisheries and wildlife habitats as the lower AAC will provide more flexibility in the forest management planning process involving these areas.

4.5 RECREATION EMPHASIS OPTION

This Option is comprised of several scenarios which examine different land bases and forest management programs aimed at enhancing the current and future forest oriented recreation opportunities. In this option, the emphasis of forest management is on the protection and management of forest recreation resources. The scenarios are as follows.

4.51 MINIMUM ACCEPTABLE PERFORMANCE SCENARIO

This scenario examines the impact of meeting minimum acceptable performance standards for the Recreation program including operational requirements, assigning Visual Quality Objectives (VQO's) for sensitive landscapes and identifying potential wilderness areas. Under this scenario, recreation resource management and recreation use management will be brought up to minimum acceptable performance standards, which includes meeting the existing demand for recreation site and trail development and bringing all existing sites and trails up to a minimum acceptable standard. A partial range of Visual Quality Objectives (VQO's) will be applied in visually sensitive areas and wilderness areas will be identified and planned in areas where there will be no impact on timber harvesting or road development.

This scenario assumes a funding level for the recreation program of $72,000/yr.

All other assumptions are as listed in the Status Quo Option.

Summary and Comparison with the Status Quo Option

		(1)
Net Land Base (ha)	256 600	+0.0%
Allowable Annual Cut (m3)	1 515 600	+0.0%
Long Run Sustainable Yield (m3/yr)	956 500	+0.0%
LRSY minus AAC (m3/yr)	-559 100	+0.0%
Current Total Inventory (m3)	97 450 000	+0.0%
Recreation Opportunity Spectrum class distribution:		
Current:		
Primitive (P) (ha)	499 711	
Semi-Primitive (SP) (ha	1 218 283	
Roaded Resource Land (RRL) (ha)	552 806	

After twenty year period:

Primitive (P) (ha)	430 107
Semi-Primitive (SP) (ha)	1 047 726
Roaded Resource Land (RRL) (ha)	793 047

(1) The net land base for this option is the same as the Status Quo Option.

Implications:

1. This scenario has minimal impact on the timber supply forecast over the long term as a result of landscape management activities within visually sensitive areas. There may be some short-term impact on timber supply due to the deferral or rescheduling of proposed harvest plans in high and medium sensitive areas i.e. the Inside Passage.

2. Visual quality will be retained on most sensitive landscapes and public expectations of visual quality will be partially met throughout the TSA. Some impact on landscape values can be expected in non-sensitive areas and visual quality will diminish, however prompt reforestation after timber harvesting will gradually lessen the initial adverse impact. With increased funding, resource and use management will be brought up to an acceptable level of performance and existing demand for site and trail development and maintenance will be met. Some high value wilderness areas will be protected but generally public demand for wilderness opportunities will not be completely met.

4.52 ENHANCED RECREATION/LANDSCAPE SCENARIO

Implementation of this scenario will meet the future demand for enhanced resource and use management including facility management, development and rehabilitation; wilderness area planning and designation throughout the TSA; and the application of the full range of Visual Quality Objectives throughout the TSA.

This scenario assumes a recreation program funding level of $122,000/yr.

Summary and Comparison with the Status Quo Option

		(1)
Net Land Base (ha)	256 600	+0.0%
Allowable Annual Cut (m3)	1 515 600	+0.0%
Long Run Sustainable Yield (m3/yr)	956 500	+0.0%
LRSY minus AAC (m3/yr)	-559 100	+0.0%
Current Total Inventory (m3)	97 450 000	+0.0%
Recreation Opportunity Spectrum class distribution:		
Current:		
Primitive (P) (ha)	499 711	
Semi-Primitive (SP) (ha	1 218 283	
Roaded Resource Land (RRL) (ha)	552 806	

After twenty year period:
The reduction in areas of Primitive and Semi-Primitive ROS classes may be less due to the designation of wilderness areas.

(1) The net land base for this option is the same as the Status Quo Option.

Implications:

1. This option has minimal impact on the timber harvest forecast over the long term as a result of landscape and wilderness management within all areas of the TSA. There will be some short-term impact on timber supply due to the deferral or rescheduling of proposed harvest plans within the Inside Passage, Bella Coola Valley and Talchako River drainage. There is no anticipated impact on the AAC from an increased level of use management.

2. Visual quality will be retained or enhanced in all areas.

3. Increased funding for the recreation program will be required to meet future demands on use and resource management, including management of the Dean River fishery.

4. There will be no change in roadless areas in this scenario.

4.53 INSIDE PASSAGE AND DEAN RIVER SCENARIO

Assumptions

1. In this scenario, forested areas of high scenic value along the Inside Passage Marine Travel Route have been removed from the forest land base available for timber production as well as portions of the Dean River drainage for enhancement of the valuable steelhead recreational fishery and important grizzly bear habitat.

2. This scenario assumes a recreation program funding level of $100,000/yr.

3. All other assumptions are the same as listed in the Status Quo Option.

4. This option assumes the management of the Dean River fishery area will be under the jurisdiction of the Ministry of Environment and no additional funding is required from the Forest Service recreation program to manage this area or the areas of high scenic values mentioned above in the Inside Passage.

Summary and Comparison with the Status Quo Option

		(1)
Net Land Base (ha)	250 100	-2.5%
Allowable Annual Cut (m3)	1 515 600	
Long Run Sustainable Yield (m3/yr)	931 500	-2.6%
LRSY minus AAC (m3/yr)	-584 100	
Current Total Inventory (m3)	94 700 000	-2.8%

Recreation Opportunity Spectrum class distribution:

Current:

Primitive (P) (ha)	499 711
Semi-Primitive (SP) (ha	1 218 283
Roaded Resource Land (RRL) (ha)	552 806

After twenty year period:
Area in Primitive and Semi-Primitive ROS classes may be slightly greater than in Status Quo Option if certain areas in Inside Passage meet their ROS class criterion.

(1) This column indicates the percent change (+/-) between this option and the Status Quo Option.

Implications:

1. Although this scenario will have a relatively small impact on the short and long term timber supplies available for the forest industry in this TSA, the tourism and recreation values of the TSA would be enhanced compared to the Status Quo Option. This enhancement would be due to the preservation of the high scenic values along the Inside Passage Marine Travel Route and an increased emphasis on managing the recreational fishery resources in the Dean River drainage.

4.6 FISH AND WILDLIFE HABITAT EMPHASIS OPTION

The Ministry of Environment is responsible for managing the majority of wildlife species and freshwater sports fisheries in B.C. Priority for this analysis is focussed on the following; grizzly bears, fish and black-tailed deer. The main objective in the analysis is to provide adequate habitat for all stages in the grizzly bear annual cycle, protect riparian zones important to fish production and maintain winter range for black-tailed deer.

The above objectives only partially address the habitat requirements of other species groups such as furbearers and non-game species. The impacts of forest management on other species are not well understood and in most cases research is needed to develop management strategies to meet population requirements or commercial demand. This option is designed to meet the Ministry of Environment objectives of maintaining habitat diversity, and it is hoped that it will also satisfy the requirements of species other than the management indicators listed above.

The provincial goals of the Ministry of Environment for wildlife habitat are; to maintain and enhance wildlife in their habitats and thus ensure an abundant, diverse and self sustaining wildlife resource throughout B.C., and to maintain ,enhance and promote opportunities to appreciate, study and view wildlife in their habitats.

Provincial goals for fish habitat management are to maintain and enhance habitat which will support natural and cultured populations of fish.

This option focuses on critical habitats, upon which the survival of key species depend. In this analysis the strategy has been to assess habitat requirements which can only be adequately addressed through reductions in the Allowable Annual Cut. These habitat characteristics are discussed below:

Black-tailed Deer

Old growth Douglas-Fir stands have been identified as being of critical importance to deer as winter range. Because there is not much information available on deer in the Midcoast TSA, only a very small portion of the potential deer winter habitat has been identified, and

only a small area has been set aside in this option (365 ha).

Grizzly Bear

The objective of grizzly bear habitat management in this TSA is to maintain and manage habitat in a condition suitable to support viable populations of grizzly bears.

Coastal grizzly bears utilize a diverse group of habitats. They move from low to high elevations, use wetlands and dry sites, and feed and rest in a variety of seral stages. Their large home ranges and complex habitat use strategies appear to be adaptations to conditions that vary seasonally and annually in distribution, quality and quantity.

At one time grizzly bear populations in this area were high, but by the mid 1970's declines in populations were observed in drainages following forest harvesting. A research project was undertaken in the Kimsquit River drainage to determine if these population declines were a direct result of logging or whether other factors were involved. Based on this research, conclusions have been formed concerning the impact of forest development on grizzly bear populations and initiatives taken to integrate grizzly bear and forest management activities. Industrial forest development modifies grizzly bear habitat availability and contributes to reduced population densities in a number of ways. The initiation of forest development in previously undeveloped drainages creates the potential for resource allocation conflict between timber production and grizzly bear management objectives Continuing forest development and silvicultural activities in developed drainages conflict with the maintenance o f grizzly bear habitat by the harvesting of the remaining mature timber in the drainage and by the nature of silvicultural activities which produce densely stocked stands of second growth forest growing on shortened rotations. Such second growth forests do not exhibit the structure and diversity required for grizzly bear habitat.

The detrimental impacts of forest management activities on grizzly bear habitat are summarized as follows; reduced quantity, diversity and productivity of available habitat; modification of the spacial and temporal distribution of habitat the alienation of grizzly bears from preferred habitat (grizzly bears will avoid traditional use of some areas in response to human activities - especially adult males).

There is a need for bio-diversity management in this TSA

to maintain habitat capability. Such a system must ensure that quantity, diversity, productivity, distribution and access to habitat exists throughout a watershed during and after development. Maintenance of habitat diversity requires input at every level of forest management planning, starting at the forest management unit level where habitat requirements are recognized and integrated into the determination of production targets for timber, range and forest oriented recreation. At the TSA level, there must be a recognition that volume reductions are required to maintain grizzly bear habitat capability. This recognition ensures that requests at the Local Resource Use Plan and the five year planning level have a "context" at the higher level of planning. This will ensure the required flexibility at lower levels of planning for the orderly implementation of measures regarding the location, extent and scheduling of forest development in specific drainages in order to maintain planned levels of grizzly bear habitat. Such requests will include long term deferrals, fringe provisions beside important habitats, and relaxation of silviculture stocking standards on some sites. In addition, extended rotations may be required to maintain grizzly bear values into the future. All such requests will be made on the basis of watershed specific information on habitat supply.

The total forest land base has been reduced by 16 362 hectares (including inaccessible areas) for grizzly bear habitat protection in this option.

Areas considered important grizzly bear habitat have been identified on 1:50 000 Ministry of Forests forest cover maps in order to determine the areas and volumes affected. Parts of the areas identified are required to ensure a long term source of large organic debris (LOD) for fish habitat, and to protect streambank stability and water quality. These habitats, identified by timber type, are found in the highest priority fish and grizzly bear watersheds, and often consist of timber types leading in spruce. A list of priority watersheds for grizzly bear habitat management is found later in this report. In some cases, such as in areas surrounding valuable esturaries, avalanche chutes, or floodplains, other timber types have been identified. It should also be noted that in the case of the Kimsquit River, the areas to be removed from the AAC have already been agreed upon in the Kimsquit Local Resource Use Plan. The stands affected include areas of accessible timber. In addition, some important wildlife and fish habitat are found in areas currently classified as inaccessible to harvesting operations.

Logging in the Midcoast TSA follows a one pass harvesting system during which all merchantable timber is removed from a drainage in a relatively short period of time. Once logging is completed in a watershed or group of watersheds accessed by a logging camp, operations are moved to another drainage or camp. Under this system, the only way to maintain grizzly bear habitat is by removing specific areas from harvest, and their associated volumes from the AAC. The assumption is that the areas left unlogged will provide the life requisites for bears during and after clear-cut logging. The Kimsquit Local Resource Use Plan is an example where this strategy has been implemented.

Fisheries

The areas previously identified as grizzly bear habitat overlap to some extent with areas of important fish habitat, as grizzly bear depend on salmon during part of their annual cycle. An additional two percent of the producive forest land base has been reserved from harvesting in this option to account for important fisheries habitat not overlapped by bear habitat.

Summary of the Fish and Wildlife Option

It would be impossible to address the requirements of all wildlife and fish species in the analysis of a Timber Supply Area. Instead the focus has been on key species (management indicators), and on maintaining habitat diversity. The areas deemed necessary by the Ministry of Environment to meet their objectives have been identified on maps, and represent the best technical judgement of that ministries staff given the quality of information available at the time. Some minor site specific adjustments are to be expected. The Ministry of Environment recommends reductions in the AAC on a watershed basis. The reductions recommended are the minimum necessary to meet that ministries objectives.

The following is a list of priority watersheds for fish and grizzly bear management in the Midcoast TSA:

Amback
Ashlum
Asseek/Ickna
Bella Coola
Chucjwalla
Clyak
Dallery/Doos
Firvale
Noeick
Noosgulch
Nootum
N. Bentinck
Nusatsum
Ocean Falls
Piper Saloompt
Smitely

Inziana
Johnston
Kalone
Kilbella
Kwatna
Lockhart Gordon
Long Lake
L. Dean
L. Kimsquit
L. Machmell
L. Sheemahant
Milton
Necleetsconnay
Neechanz
Nekite
Smokehouse
Talchako
Taleomey
U. Machmell
U. Dean
U. Sheemahant
U. Kimsquit
Wannock
Washwash/Tzeo
Takush
Braden
Quatlena
Sakumtha
Salahagen

Summary and Comparison with the Status Quo Option

		(1)
Net Land Base (ha)	245 500	-4.3%
Allowable Annual Cut (m3)	1 515 600	
Long Run Sustainable Yield (m3/yr)	891 300	-6.8%
LRSY minus AAC (m3/yr)	-624 300	
Current Total Inventory (m3)	89 710 000	-7.9%

Recreation Opportunity Spectrum class distribution:
Current:

Primitive (P) (ha)	499 711
Semi-Primitive (SP) (ha	1 218 283
Roaded Resource Land (RRL) (ha)	552 806

After twenty year period:
Area in Primitive and Semi-Primitive ROS classes may be greater than in Status Quo Option if fish and wildlife habitat areas also meet the ROS class criterion.

(1) This column indicates the percent change (+/-) between this option and the Status Quo Option.

Implications:

1. In this option the long run sustainable yield of the TSA will be reduced by 65 200 m3/yr compared to the Status Quo Option. The short term volume of timber available to the forest industry will be reduced by 7.4 million cubic meters.Both of these factors will have a negative impact on the forest industry within this TSA. An important factor in these losses is the location and quality of

mature timber and growing sites involved, most of the areas being valuable timber and high quality growing sites located at lower elevations.

2. This option will be beneficial to the Ministry of Environment in achieving their goals and objectives in managing the fish and wildlife resources of the Midcoast TSA and the Province.

5.0 SUMMARY OF OPTIONS AND SCENARIOS

The information presented in this section is a brief summary of the analysis carried out, and as such forecasts only general trends in forest management in this TSA. This is not a detailed evaluation of the forest management potential or the social and economic implications of the forest management options available in the TSA.

The analysis shows that the current AAC of approximately 1 500 000 cubic metres cannot be maintained indefinitely. The Status Quo Option indicates that the AAC declines to a long run sustainable yield level of 956 000 cubic metres per year for this land base. The reduction in the timber supply forecast compared to the previous analysis (AAC Rationale Option) is due primarily to a re-assessment of the current economically recoverable wood supply in the TSA. This re-assessment has resulted in a 33 000 hectare decrease in the area of mature wood available for harvest in this TSA compared with the 1980 landbase upon which the present AAC is based.

There is minimal Crown range in this TSA; approximately 1 150 Animal Unit Months is the current demand. This TSA ranks low when compared to other TSAs in the province in terms of forage production and demand for additional Crown range land. The demand for Crown range land is not expected to increase significantly in this TSA over the next five years.

A review of the forest recreation program shows that the present program is not able to meet the current or projected demand for forest recreational use within the TSA nor is it able to meet all recreation planning obligations. An enhanced recreation and landscape program will provide adequate resources to meet program requirements necessary to integrate the recreation program with timber harvesting and other activities.

The most optimistic timber supply forecast in the analysis is the 'Improved Access Scenario' of the Timber Production Emphasis Option

and is due to an increased area (127 200 ha) of mature wood available for harvest in the short term. This additional supply of wood is located in the better quality stands considered inaccessible in the Status Quo Option. The increased area referred to above increases the long run sustainable yield of the TSA by 422 000 m3/yr above the status quo level. The higher level of long run sustainable yield and increased area and volume of mature timber available for harvest result in the current AAC being maintained for most of the two hundred year planning horizon before declining to the long run sustainable yield level of 1 379 000 cubic metres per year. The acceptance of this scenario implies an immediate increase in forest harvesting development in these uneconomic stands by non conventional or other harvesting methods. To date, no harvesting has occurred in these stands. This scenario is not considered feasible at this time, although it is possible that a portion of the areas considered inoperable in the Status Quo Option may become economically recoverable in the future.

An analysis of incremental silviculture activities on future timber supplies was carried out in the 'Incremental Silviculture Scenario" and indicates that the long run sustainable yield of the TSA can be increased by 33 500 cubic metres per year. These activities are comprised of planting backlog NSR areas, juvenile spacing and fertilization. The incremental silviculture gains indicated in this analysis are volume gains only. Important considerations such as improved wood quality and reduced harvest ages realized from incremental silviculture have not been analyzed.

The inclusion of the upper Machmell and Neechanz draingages of the TSA in the AAC is analyzed in the 'Upper Machmell and Neechanz Drainage Scenario' of the Timber Production Emphasis Option and has minimal impact on the short and long term harvest forecasts of the TSA. This is because of the relatively small area involved, less than 6 400 hectares contributing approximately 21 400 cubic metres per year to the long run sustainable yield of the TSA. Although the impact of deleting this area from the AAC of the TSA may appear small, the cumulative effect of numerous small deletions on long term timber supplies must be considered, as well as short term operational difficulties which may be created.

The option of reducing the AAC from its current level of 1 515 000 m3 to a rate of 956 500 m3 is presented in the 'Reduced AAC Option'. Although the land base is the same as in the Status Quo Option, the harvest forecast is significantly different. The harvest rate of 956 00 m3 can be maintained indefinitely because it is equal to the long run sustainable yield of the land base on which it is based. Although the immediat impact on the forest industry would be negative, it may be offset to some extent by a more stable long term timber supply and increased flexibility in incorporating non timber values into forest harvesting development plans.

The 'Inside Passage and Dean River Scenario'of the Recreation Emphais Option was analyzed to examine the impact of deleting an area of land adjacent to the Inside Passage Marine Travel Route and an identified zone of the Dean River drainage because of high recreational values. This deletion reduces the TSA land base by 6 400 hectares and reduces the long run sustained yield of the TSA by 36 000 cubic metres per year.

The impact of placing an increased management emphasis on the maintenance of critical wildlife and fisheries habitat areas was also examined in the Fish and Wildlife Emphasis Option. Forested areas amounting to approximately 11 100 hectares were deleted from the forest land base for habitat protection purposes. The reduction in the area and volume of mature timber has a significant impact on forecasted timber harvests, although the long term effects are less pronounced. The timber supply forecasts drops faster and to a lower level than in the Status Quo Option, finally reaching the long run sustainable yield of 891 300 cubic metres per year.

The key statistics concerning each option and scenario carried out in this analysis are presented in Appendix I.

APPENDIX I

SUMMARY AND COMPARISON OF SCENARIOS --- MIDCOAST TSA.

	AAC RATIONALE	STATUS QUO	IMPROVED ACCESS	INCREMENTAL SILVICULURE	MACHWELL NEECHANZ	REDUCED AAC	MINIMUM ACCEPTABLE PERFORMANCE	ENHANCED RECREATION	INSIDE PASSAGE and DEAN RIVER	FISH and WILDLIFE
Total Crown Land Area (ha)	2270800	2270800	2270800	2270800	2270800	2270800	2270800	2270800	2270800	2270800
Timber Resource										
Net land base (ha)	226626	256555	383763	256555	262919	256555	256555	256555	250144	245467
AAC (M3)	1400000	1515600	1515600	1515600	1515600	956500	1515600	1515600	1515600	1515600
LRSV (m3/yr)	837900	956500	1379900	990000	977900	956500	956500	956500	931500	891300
LRSV minus AAC (m3/yr)	-562100	-559100	-135700	-525600	-537700	0	-559100	-559100	-584100	-624300
Total Inventory (m3X1000)	117600	97450	173780	97450	101290	97450	97450	97450	94700	89710
Recreation Resource										
Primitive Area (ha)	499711	499711	decrease	Same as	Same as	Reducution	499711	499711	499711	499711
Semi Primitive Area (ha)	1218283	1218283	decrease	status	status	in P,SP	1218283	1218283	1218283	1218283
Roaded Resource Land (ha)	552806	552806	increase	quo.	quo.	will be slower.	552806	552806	552806	552806
Impact on scenic values		Some loss of values.	Same as	Same as	Same as	Less than	Limited VQO's set.	All TSA assessed.	Same as Status Quo.	Less than Status Quo.
Impact on wilderness		No areas designated.	Status Q.	Status Quo.	Status Quo.	Status quo.	Areas identified.	Areas designated.	Same as Status Quo.	Same as Status Quo.
Recreation Sites (ve./units)	9	9	9	9	9	9	# will increase.	Future demand met.	9	9
Km's of trails	25	25	25	25	25	25	# will increase.	Future demand met.	25	25
Wildlife Resource										
Reserved Area (ha)	1379	1379	1379	1379	1379	1379	1379	1379	1379	11088
Range Resource										
Crown Forage (AUM's)	1150	1150	1150	1150	1150	1150	1150	1150	1150	1150

APPENDIX II

RECREATION OPPORTUNITY SPECTRUM
DELINEATION CRITERIA

PRIMITIVE

Greater than or equal to 8 km from primitive roads
Greater than or equal to 5 000 hectares.

Setting is essentially an unmodified environment. Evidence of humans would be unnoticed by an observer wandering through the area.
Evidence of trails is acceptable, but should not exceed standard to carry expected use.

SEMI-PRIMITIVE NON-MOTORIZED

Greater than or equal to 1 km from primitive roads.
Greater than or equal to 1 000 hectares.

Natural setting may have subtle modifications that would be noticed but not draw the attention of an observer wandering through the area. Area has not been logged or subject to industrial activity or it has been rehabilitated (second growth) to a point that it is no longer readily recognizable as an industrial/logged area.
Structures are rare and isolated.

SEMI-PRIMITIVE MOTORIZED

Greater than or equal to 1 km from better than primitive roads.
Greater than or equal to 1 000 hectares.

Natural setting may have moderately dominant alterations but would not draw the attention of motorized observers on trails, waterways and primitive roads within the area. (i.e. industrial or agriculture activity must not be noticeable to the motorized recreational user).
Structures are rare and isolated.

ROADED RESOURCE

Within 1 km of better than primitive roads.
No size criteria.

Natural setting may have modifications which range from being easily noticed to strongly dominant. Resource utilization and modification practices may be evident. However, from sensitive travel routes these alterations would remain unnoticed or visually subordinate.

There is strong evidence of designed roads, highways and/or railroads. Structures are generally few and scattered, remaining visually subordinate or unnoticed to the traveller on a sensitive travel route.

RURAL

No remoteness criteria.
No size criteria.

Natural setting is culturally modified to the point that it is dominant to the observer on a sensitive travel route. May included pastoral, agricultural, intensively managed resource extraction or utility corridors. Pedestrian or other slow moving observers are almost constantly in view of culturally changed landscapes. There is strong evidence of designed roads, highways and/or railroads. Structures are readily apparent and may range from scattered to small dominant clusters.

URBAN

No remoteness criteria.
No size criteria.

Setting is strongly structure dominated. Natural or natural-appearing elements may play an important role but be visually subordinate. Pedestrians and other slow moving observers are constantly in view of artificial enclosure spaces.
There is strong evidence of designed roads, highways, streets, and/or railroads. Structures and structure complexes are dominant.

APPENDIX III
GLOSSARY

1. Allowable annual cut (AAC). The rate of timber harvest from a specified area of land. AAC's are determined by the Chief Forester for Timber Supply Areas (TSAs) and Tree Farm Licences (TFLs) in accordance with Section 7 of the Forest Act. AAC's are normally determined as part of a forest management plan (TSA Resource Management Plan or TFL Management and Working Plan), and are subject to periodic reassessment.

2. AAC Apportionment. The distribution of the AAC for a TSA among timber tenures by the Minister of Forests in accordance with Section 8 of the Forest Act.

3. AAC Rationale. The long term timber supply objectives and the broad management assumptions and strategies upon which an AAC is based. These include, for example, the harvest forecast, the operable land base, timber harvesting priorities and constraints, timber utilization levels and standards, levels of unsalvaged losses and Five Year Program requirements and performances.

4. Animal Unit Month (AUM). The amount of forage required to sustain one 455 kg cow and unweaned calf for one month.

5. Backlog. A Ministry of Forests term applied to forest land areas where silviculture treatments such as planting and site preparation are overdue. Planting is considered backlog if more than 5 years have elapsed since a site was cleared (by harvest or fire) in the interior and more than 5 years on the coast.

6. Basic Silviculture. Maintenance of the productivity of forest sites, restocking of denuded forest lands with commercial tree species within 3 years for areas west of the Coast Range including protection against damage by fire, insects and diseases to predetermined standards.

7. Environmentally Sensitive Areas (ESA's). ESA's for forestry include potential fragile or unstable soils that may deteriorate unacceptably after forest harvesting, and areas of high value to non-timber uses such as fisheries, wildlife, water and recreation.

8. Forest Licence. A forest tenure which allows an orderly timber harvest over a portion of a sustained-yield management unit and the timely reforestation of harvested areas according to a strategic resource management plan prepared by the Ministry of Forests for the timber supply area. The licence has; a term of 15 to 20 years, replaceable every 5 years for a 15 year period (some are non-replaceable); and, operating areas which continuously shift over time within the timber supply area - once an area is harvested and reforested, the

licensee moves to another part of the timber supply area.

9. Integrated Resource Management. Resource management practices which are predicated on the principle of integrating resource uses in order to achieve the optimum social and economic benefit to all resource users. A legislated requirement of the MoF as set out in Section 4(c) of the Ministry of Forests Act.

10. Incremental Silvicultural Practices. Any silvicultural practice, or level of silvicultural practice, which in conjunction with basic silvicultural practices, constitutes an investment in securing future wood yields over and above those possible from basic silvicultural regimes.

11. Juvenile spacing. A silviculture treatment to reduce the number of trees in young stands, often carried out before the stems removed are large enough to be used or sold as a forest product. Prevents stagnation and improves growing conditions for the remaining crop so that at final harvest the end-product quality and value is increased.

12. Long run sustainable yield (LRSY). A measure of land base productivity for specified management assumptions. LRSY is a function of the size and productivity of the land base, the current growing stock, the length of the planning horizon and management assumptions (for example, unsalvaged losses, regeneration delay, managed stand yield tables, extended minimum cutting ages, etc.) and how they are analyzed or modelled.

13. Local Resource Use Planning. The resolving of integrated resource use conflicts. The development of area-specific integrated resource management guidelines that enable planning to proceed. One of five planning levels in the Forest Planning Framework (Resource Planning Manual, Chapter 1). LRUP's include, for example, Community Watershed Plans , Community Watershed Plans and Resource Folio Plans.

14. Management Strategy. A game plan. In the TSA Resource Management Plan, the politics, programs and actions required, and how these are orchestrated, to implement the management direction (i.e. production targets) established in the current TSA plan.

15. Net Land Base. See Net Land Base.

16. Not Satisfactorily Restocked (NSR). Productive forest land that has been denuded and has failed partially or completely to regenerate naturally or to be artificially regenerated within 3 years of denudation on the coast and 5 years in the interior.

17. Old growth timber. In general forestry terms, forest stands

which are greater than 141+ years of age. The definition of old growth is currently a topic of a Forest Service initiative entitled "Towards and Old Growth Strategy".

18. Operable Land Base. The portion of a land base which is considered to contribute to and be available for long term timber supply. The Net Land Base is defined for an option or scenario by reducing (or "netting down") the total (or "gross") land base in a manner consistent with the management assumptions for that option or scenario.

19. Option. A set of assumptions representing a possible management direction. Options are constructed as a normal part of a planning process in order to provide a framework for analysis and facilitate management decision-making. The term option can be use in the context of a management option, a planning option or an analysis option depending upon the nature of the assumptions defining the option. An option is usually synonymous with an "alternative" or "scenario". However, an analysis of an option may take the form of a number of different model scenarios or "runs", each representing minor changes within a broad set of assumptions.

20. Planning. A support to forest resource management which synthesizes data, coordinates decision-making, evaluates alternatives and translates policies into plans. Discussed in the Forest Planning Framework (Resource Planning Manual, Chapter 1).

21. Provincial Forest. Land designated by the Lieutenant Governor in Council under Section 5 of the Forest Act and which must be managed and used in accordance within the provisions of that section.

22. Production Target. A forecast of resource supply over time, based on current policies, programs and practices, and their continuation over the planning horizon. In the TSA Resource Management Plan, production targets are identified for timber harvesting, forage harvesting and recreation opportunity. The first five years of the timber harvesting production target is the AAC of the TSA for the term of the current plan.

23. Pulpwood Agreement (PA). A pulpwood agreement provides the holder of a wood residue processing facility, without competition, a supply of wood fibre from pulpwood stands, if sufficient quantities of wood residues, or by-products of conventional timber processing, are not available to the holder. An agreement covers; a 25 year term and may be replaceable every 10 years; and, a large area in one or more timber supply areas in which supplemental standing timber may be harvested. Harvesting authority is provided through timber sale licences where the licensee is responsible for all operational planning, development, basic silviculture and forest protection.

24. Quality (of timber harvested). Characteristics of the timber resource, including the timber itself and circumstances surrounding its extraction, which differentiate desirability or profitability. Because of the general lack of economic parameters in the forest inventory, quality of timber harvested is usually estimated or inferred through physical stand or site characteristics.

25. Recreation. Any physical or psychological revitalization. Forest-oriented recreation, as it pertains to the Ministry of Forests recreation program, includes wilderness, scenic landscapes, cultural and heritage landmarks and developed facilities.

26. Recreation inventory. The Ministry of Forests province wide inventory of the Provincial forest recreation resource. Includes a features inventory, landscape inventory, Recreation Opportunity Spectrum inventory and facilities inventory

27. Recreation Opportunity Spectrum. A framework for forest recreation managers and policy makers which recognizes the diversity of people's motivations and needs for recreation and seeks to provide a diversity of opportunities to meet these needs.

28. Recreation Program. The Ministry of Forests program whose mission is to provide the opportunity for recreation experiences and benefits by protecting, and managing the use of, the Provincial forest recreation resource.

29. Rotation Age. The number of years, following denudation, required to establish and grow a timber crop to a specified condition of maturity.

30. Resource Management Plan. The forest management plan developed for a TSA. The Resource Management Plan establishes the over all direction for the management of the forest and range resources under Ministry of Forests jurisdiction in a TSA. This management direction includes the specification of production targets, provisions for other agency objectives, management strategies, directions to lower level plans and Five Year Program needs and opportunities. This document was formerly called a TSA Plan.

31. Small Business Forest Enterprise Program (SBFEP). A program administered by the Ministry of Forests for the purpose of allowing small business enterprises to acquire and harvest timber. The objectives of this program are: creation of new businesses in timber harvesting and manufacturing; diversification of the forest products industry; increasing efficiency in the forest industry through competition; and, increasing revenue to the Crown. The SPFEP is comprised of two categories: Category 1 is for timber harvesters; and,

Category 2 is for manufacturers of forest products.

32. Timber Supply Area (TSA). An integrated resource management unit established, in accordance with Section 6 of the Forest Act, as a revision to and a consolidation of the former Public Sustained Yield Units. The TSA is the land unit with respect to which Resource Management planning is carried out.

33. Timber Supply Forecast. A measure of timber supply. A harvest forecast is usually a measure of the maximum timber supply that can be realized, over time, from a land base for specified management assumptions. It is an output of forest planning models and is a function of the size and productivity of the land base, the current growing stock, the length of the planning horizon and the totality of management objectives, constraints and assumptions and how they are modelled.

34. Tree Farm Licence(TFL). A forest tenure which is a "stewardship" agreement for a sustained-yield management unit. This includes the right to harvest a specified volume of timber annually and the obligation to carry out all phases of forest management on behalf of the Ministry of Forests. The licence has fixed boundaries, a 25-year term and is replaceable every 10 years.

35. Timber Sale Licence(TSL). A forest tenure which provides for the harvest of relatively small volumes of timber within a specified area by: operators with small allowable annual cuts; operators registered under the small business forest enterprise program or others with temporary cutting rights; and, holders of pulpwood agreements.

36. Timber Licences (TL's). Formerly 'old temporary tenures' which are area based tenures where the mature, merchantable timber has been sold to the tenure holder. They revert to the government when merchantable timber on the area has been harvested and the land has been reforested. Many of these licences have been incorporated into tree farm licences.

37. Visual Quality Objective. A desired level of excellence based on physical and sociological characteristics of an area. Refers to degree of acceptable alteration of the characteristic landscape.

38. Wilderness. A condition of remoteness and naturalness. A distinct resource and legitimate land use with a range of meanings, values and uses. A concept which is operationally defined for each jurisdiction by legislation, policies and management plans.

39. Wilderness Area. A part of the Provincial Forest designated as wilderness under Section 5.1 of the Forest Act.

40. Woodlot Licence. A forest tenure similar to a tree farm licence, except the scale of operation is much smaller - not more than 400 hectares of Crown land plus any size of private land. The licence is for 15 years, replaceable every 5 years for a further 15 year period.